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**CLAIMS:**

What is claimed is:

- 5 1. A method of multicasting a data packet in a system area network, comprising:
  - receiving the data packet, wherein the data packet includes an identifier of a multicast group;
  - identifying a plurality of queue pairs that are
  - 10 members of the mutlicast group; and
  - delivering the data packet to each of the plurality of queue pairs that are members of the multicast group.
- 15 2. The method of claim 1, wherein the data packet is received in a channel adapter of an end node.
3. The method of claim 2, wherein delivering the data packet to each of the plurality of queue pairs that are members of the multicast group includes replicating the
- 20 data packet for each of the plurality of queue pairs that are internal to the end node.
4. The method of claim 1, further comprising:
  - decoding the data packet; and
  - 25 storing the data packet in a multicast packet buffer.
5. The method of claim 4, wherein decoding the data packet and storing the data packet in the multicast
- 30 packet buffer are performed by port logic.

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6. The method of claim 4, wherein decoding the data packet and storing the data packet in the multicast packet buffer are performed by channel adapter logic.

- 5 7. The method of claim 1, wherein identifying the plurality of queue pairs includes determining which queue pairs are associated with a destination local identifier in the data packet.
- 10 8. The method of claim 7, wherein determining which queue pairs are associated with the destination local identifier includes using a destination local identifier to queue pair lookup table.
- 15 9. The method of claim 8, wherein the destination local identifier to queue pair lookup table contains a fixed number of queue pair identifier columns per destination local identifier.
- 20 10. The method of claim 8, wherein the destination local identifier to queue pair lookup table contains a flexible number of queue pair identifier columns per destination local identifier.
- 25 11. The method of claim 10, wherein one of the queue pair identifier columns associated with the destination local identifier serves as a link to another entry in the destination local identifier to queue pair lookup table.
- 30 12. A computer program product in a computer readable medium for multicasting a data packet in a system area network, comprising:

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first instructions for receiving the data packet,  
wherein the data packet includes an identifier of a  
multicast group;

second instructions for identifying a plurality of  
5 queue pairs that are members of the mutlicast group; and  
third instructions for delivering the data packet to  
each of the plurality of queue pairs that are members of  
the multicast group.

10 13. The computer program product of claim 12, wherein  
the data packet is received in a channel adapter of an  
end node.

14. The computer program product of claim 13, wherein  
15 the third instructions for delivering the data packet to  
each of the plurality of queue pairs that are members of  
the multicast group include instructions for replicating  
the data packet for each of the plurality of queue pairs  
that are internal to the end node.

20 15. The computer program product of claim 12, further  
comprising:

fourth instructions for decoding the data packet;  
and

25 fifth instructions for storing the data packet in a  
multicast packet buffer.

16. The computer program product of claim 15, wherein  
the fourth instructions for decoding the data packet and  
30 the fifth instructions for storing the data packet in the  
multicast packet buffer are executed by port logic.

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17. The computer program product of claim 15, wherein the fourth instructions for decoding the data packet and the fifth instructions for storing the data packet in the multicast packet buffer are executed by channel adapter  
5 logic.

18. The computer program product of claim 12, wherein the second instructions for identifying the plurality of queue pairs include instructions for determining which  
10 queue pairs are associated with a destination local identifier in the data packet.

19. The computer program product of claim 18, wherein the instructions for determining which queue pairs are  
15 associated with the destination local identifier include instructions for using a destination local identifier to queue pair lookup table.

20. The computer program product of claim 19, wherein the destination local identifier to queue pair lookup  
20 table contains a fixed number of queue pair identifier columns per destination local identifier.

21. The computer program product of claim 19, wherein the destination local identifier to queue pair lookup  
25 table contains a flexible number of queue pair identifier columns per destination local identifier.

22. The computer program product of claim 21, wherein  
30 one of the queue pair identifier columns associated with the destination local identifier serves as a link to

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another entry in the destination local identifier to queue pair lookup table.

23. An apparatus for multicasting a data packet in a  
 5 system area network, comprising:  
     means for receiving the data packet, wherein the data packet includes an identifier of a multicast group;  
     means for identifying a plurality of queue pairs that are members of the mutlicast group; and  
 10      means for delivering the data packet to each of the plurality of queue pairs that are members of the multicast group.

24. The apparatus of claim 23, wherein the data packet  
 15 is received in a channel adapter of an end node.

25. The apparatus of claim 24, wherein the means for delivering the data packet to each of the plurality of queue pairs that are members of the multicast group  
 20 includes means for replicating the data packet for each of the plurality of queue pairs that are internal to the end node.

26. The apparatus of claim 23, further comprising:  
 25      means for decoding the data packet; and  
     means for storing the data packet in a multicast packet buffer.

27. The apparatus of claim 26, wherein the means for  
 30 decoding the data packet and means for storing the data packet in the multicast packet buffer are include port logic.

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28. The apparatus of claim 26, wherein the means for  
decoding the data packet and means for storing the data  
packet in the multicast packet buffer include channel  
5 adapter logic.

29. The apparatus of claim 23, wherein the means for  
identifying the plurality of queue pairs includes means  
for determining which queue pairs are associated with a  
10 destination local identifier in the data packet.

30. The apparatus of claim 29, wherein the means for  
determining which queue pairs are associated with the  
destination local identifier includes means for using a  
15 destination local identifier to queue pair lookup table.

31. The apparatus of claim 30, wherein the destination  
local identifier to queue pair lookup table contains a  
fixed number of queue pair identifier columns per  
20 destination local identifier.

32. The apparatus of claim 30, wherein the destination  
local identifier to queue pair lookup table contains a  
flexible number of queue pair identifier columns per  
25 destination local identifier.

33. The apparatus of claim 32, wherein one of the queue  
pair identifier columns associated with the destination  
local identifier serves as a link to another entry in the  
30 destination local identifier to queue pair lookup table.

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34. The method of claim 1, wherein receiving the data packet includes:

- 5 determining if there is an error in receipt of the data packet; and
- if there is an error in receipt of the data packet, dropping the data packet.

35. The method of claim 1, wherein delivering the data packet to each of the plurality of queue pairs that are members of the multicast group includes:

- 10 determining if there is an error in delivering the data packet to each of the plurality of queue pairs; and
- dropping the data packet if an error occurs during
- 15 delivery of the data packet to each of the plurality of queue pairs.

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